Social Value Creation through Multidisciplinary Design Education

Abstract

The paper proposes that design with a multidisciplinary student cohort as active partners can play the role of bringing the four different stakeholder groupings, namely, government, industry, society and academia together within the creative consortia, and create innovation for the greater good of the society.

By studying a selection of social innovation projects undertaken by multidisciplinary student teams as connector-integrators, which engaged with companies, government bodies and community groups, we have examined a combination of 'four' different activities across different economic and cultural (human experience) contexts to assess their different degrees of appropriateness in creating future value.

We apply these methods to establish 'creative consortia', which has enabled us to reframe the context of the problem space. We believe that the creative consortia has the potential to create more relevance in the solution space, greater engagement in realising the proposition into the future, and a higher opportunity for integration of such future principles into emerging government policy, and national innovation agendas.

Key words - Creative Consortia, Multi-stakeholder Collaboration, Learning and Teaching, Social Innovation, Student led Innovation.

This investigation is a result of post rationalisation of social innovation projects undertaken by the academic group called Multidisciplinary Innovation comprising of students, academics and researchers. The purpose of this reflective investigation was to consolidate a methodological framework involves the students in a connector-integrator role in order to create a successful multistakeholder framework within the premise of learning and teaching environment. Evidence collected from three distinct multidisciplinary student driven social innovation projects highlights the existence of a framework of stakeholders called the 'creative consortia'.

Multidisciplinary teams co-create and propose innovative and meaningful value for people, and ensure maximum impact, however, the decisions on 'who' the stakeholders are, 'how' can this collaboration work, and 'what' value each stakeholder gains are all questions that surround such collaborations. The challenge for design is to find ways to engage all these stakeholders to propose futures, which offer meaning, value and a sense of transformation for

society as a whole. This research sought to answer the following research question: how does a university through a student-led innovation programme ensure that the creative consortia is maintained, that value is created for all involved stakeholders, and that citizens are empowered?

Background

The student projects, part of the MA/MSc Multidisciplinary Innovation programme (MDI), were used as an experiment to consider the principles and practices successful in achieving social innovation to take place on behalf of the client partner. A small number of the students (3-5) were put in multidisciplinary teams (comprising of design, engineering, business, psychology), so that no single disciplinary perspective was dominant, and provide a more comprehensive view on the variety of projects reviewed.

The first project with The Low Simonside was undertaken within a three-week period, and it concluded in 'stimulating' the client's thinking. The work stimulated the client to take action based upon an enhanced understanding of the community, based on insights about the differing needs of the community that the Low Simonside Community Centre serves. The project also energised the community by enhancing their involvement in future change.

The second project is The Town of Colour project, conducted in three phases over two years; the students carried out the first two phases, and the third phase was carried out as contract research. This project realised a much greater impact on the community and has triggered a series of funded community enhancement projects in the project's town.

The third project with The Percy Hedley Foundation project is on-going. The first phase for this project, conducted by the student community, over a three-month period in 2014, resulted in 'organisation stimulation', where students acted as a catalyst for the client. This organisational stimulation led to the Percy Hedley Board of Trustees agreeing to and securing

funding for phase two. The second phase being more research-focused aimed at developing a model of responsible enterprise for and operating across the Percy Hedley Foundation. The research provided a platform and route to establishing new enterprise behaviours and activities through appropriate governance, leadership and support.

Literature Review

Design Led-Social Innovation

Interest in social innovation comes from a variety of fields, including social entrepreneurship, technology, public policy, urban and community development and social movements, with each contributing their own methods and insights (Mulgan, G., 2007). Design (thinking), however, is perceived to be particularly well-suited to tackle many challenges that social innovation poses as it offers a creative approach that combines prototyping potential solutions, actively involving stakeholders and addressing users' needs, with the ability to go beyond established assumptions (Brown & Wyatt, 2010; Murray R. et al. 2010).

Jégou & Manzini (2008) characterise the use of creativity to change and improve existing thought patterns and behaviours by recombining products, services, and knowledge as design-led processes. Manzini, E. (2014) distinguishes two modes of operation in these processes: when designing *with* communities, professional designers are participating as peers with the other stakeholders in a project. Here, designers need to support and facilitate the collaboration among the different stakeholders and in the construction of shared visions and scenarios. When designing *for* communities, however, designers provide solutions for collaborative services (co-created multiple stakeholder projects) in order to make them more accessible and effective by developing digital platforms, scenarios and organising events such as exhibitions and festivals.

Although design led social innovation is known under various different names, such as

design and social innovation and *design for social innovation*, and its definitions are in constant flux due to the on-going discourse, Westley, F. et al. (2012), Chick, A. & Micklethwaite, P. (2011) and Chick, A. (2012) find that credible models share the following common characteristics:

1. Broad-based research

2. Co-creating the solution

3. Conducive physical space(s) that aid creativity and reassures participants

4. Clear process design and facilitation

5. Engaging hands-on design devices (sketching, mock-ups, prototyping and design games)

6. Multidisciplinary support team

7. Tools that aid reflection on the nature of the work and its possible and actual impacts

8. Continual professional development of designers and other team members

The fact that design and designers can play an important role as facilitator-connector in social innovation has been recognised by several authors. Mulgan, G. et al. (2007) state that the people and institutions which connect different people (designers, among others), ideas, money and power play a crucial role in social innovation, forming new social relationships between individuals and groups which were previously separate from one another. Cipolla, C. & Moura, H. (2012) regard *design as a connector* as one of the design approaches to social innovation, which entails the mapping of the physical, human or strategic resources and understanding their interactions, envisioning relationships that are more sustainable and prototyping them as part of an integrated system. Manzini's (2015) collaborative organisations, made both possible and likely by design for social innovation, are social groups that have emerged in a highly connected environment. In addition, their members

collaborate in order to achieve specific results, creating social, economic and environmental benefits.

However, Chick, A. (2012) asserts that designers no longer limit themselves to researching and designing together with stakeholders within a project. Instead, designers are moving beyond project boundaries by enabling future stakeholders to continue the design process. Defined as 'infrastructuring' by Hillgren, P-A, Seravelli, A. & Emilson, A. (2011), it focuses on long-term commitment from the stakeholders, keeps the design structure open-ended and does not need to feature formal elements such as predefined goals or fixed timelines. It is a continuous process where relations are constructed with a wide range of stakeholders and flexible time and resources.

We argue that a strategic 'connector-integrator' role of design would actively work towards bridging the gap between the stakeholders involved by creating the right environment for the collaboration, and maintaining the infrastructure. We believe that such an infrastructure is better placed within a university led model and not a government or industry one, nevertheless, the model must be unlike the ones such as the Tripple helix.

Engagement Models for Social Innovation

Historically models such as the triple helix support innovations, with Industry-Government-University collaborations looking at delivering three-way value (Ranga, M., 2015). Nevertheless, due to its limitations the triple helix model is now considered out-dated and alterations are being proposed to this traditional model to suit it to the post-modern needs of innovation. Wise and Høgenhaven (2008) suggest that there is a need for a paradigm shift where innovation models are concerned. According to them the role of users within innovation is growing, and all new models of innovation must include engagement of user communities. Many argue that mere inclusion of 'users' would only allow niche innovations

that are product based, and commercial in character; and social innovation would need wider participation from different societal groups.

One such example depicting the limitation of a typical triple helix model was the HiCS (Highly Customized Solutions) project that also presented yet another alternative multi-stakeholder collaboration. The projects under HiCS were funded by the European Community 5th Framework Programme, focused on the topic 'food for people with reduced mobility', and initiated a collaboration between European enterprises (TNO, Philips), and university research communities (based in Politico de Milano, Cranfield University). Manzini, E., Collina, L., & Evans, S. (2004) concluded these projects as solution oriented partnerships, which focused on creating cross disciplinary, cross sector connections, resulting in co-production of sustainable solutions; i.e. Manzini's designing for communities process. Whilst these collaborative projects were designed to create several partnership-based case studies, they also created innovative sustainable solutions. An interesting aspect of this European commissioned collaboration was the initiation of a bigger role for the 'citizen/people', nevertheless their involvement was limited (Valota, P., 2014), demonstrating a collaboration that was unequal. Undeniably, this suggests that Manzini's designing with communities an important missing link for the HiCS project.

Scholars such as Eriksson et al. (2005), Yawson (2009), Lundvall et al. (2002), and Thomke & von Hippel (2002) have constantly proposed including the 'users' as the fourth pillar to the triple helix, as they believe that most innovation should be user-centred and account society as an equal stakeholder. The inclusion of the fourth pillar as the citizen/user/public gave way to the emancipation of an alternative helix known as the quadruple helix. These multidisciplinary and multi-stakeholder models for innovation have created a new opportunity for the inclusion of the citizens/people as a participant within a social innovation project. Therefore, most traditional models of innovation including quadruple helix are now

under threat, by the rise of the need to make use of models, which allow for decentralized, distributed, and user-centred innovation processes, and outcomes.

Whilst the positive impact of university led social innovations have been documented Goddard, J. (n.d.), alternative models illustrating different ways in which student groups and design could be mobilised to have an impact on society, and respond to, or indeed begin to solve social problems have not been investigated.

Role of Design in Creating Multi-Stakeholder Value

The challenge associated with all the above types of systems is that they are always evolving, and trying to fit the requirements of multiple stakeholders, giving rise to disconnected engagement (Lundvall, B.-Å., 2010). Lundvall, B.-Å. (ibid.) and Nelson, R. R. (1993) put importance on the common values, and common purpose shared between the producers, and users of knowledge within such projects. In order to ensure that any system generates value to all stakeholders there is a strong need for an objective entity to play the role of a 'connector-integrator'.

One such example can be seen in the social innovation methods created by Philips Electronics (Design) through projects such as "Chulha" (the design and manufacture of a wood burning stove) using a philanthropic approach (Philips, 2008). This was an outcome of a program started by Philips Design, which aimed at aligning the company's corporate social responsibility programme with its integrated strategy for brand leadership, strengthening employee engagement, increasing trust and customer loyalty, while developing new ways of working and in time creating (co-creatively) innovative solutions. Under the particular 'philanthropy' program at that time Philips focused on the problem of indoor pollution caused by biomass fuel in open cookers in rural India.

In order to understand the socio-cultural aspect of the problem space the design team at

Philips saw that it had to collaborate with a local sustainable development agency named ‘Green Earth’; their *first* stakeholder. Further, Philips investigated the local infrastructural facilities, products and production facilities, and distribution channels for existing stoves, and for this they collaborated with a non-profit organisation named ARTI, entrepreneurs, and self-help groups such as SEDT (Socio Economic Development Trust); their *second* stakeholder. The addition of citizens as their *third* stakeholder set this project apart as a potential social innovation as compared to the HiCS project. Philips used a design-led approach to involve citizens in the focus group discussions and co-design workshops; an all-round participatory design approach. The project led to the creation of two versions of the stove locally called ‘chulha’. These products were created locally in collaboration with the local entrepreneurs and social enterprises, and were also co-created with the citizens, bringing value to all involved stakeholders, highlighting the true value of a design led approach to multi-stakeholder engagement. However, since Philips Design played led the project process, the outcome of the project was centred to commercial benefits. The knowledge created was solely for the use of the organisation, therefore the project fell short of having a clear social impact; a key limitation of such projects if not led by the university.

Methodology

For each of the three projects data was collected on process, methods, tools and approaches to innovation. Involved students, clients, and other stakeholders were interviewed, and student activity logbooks were reviewed. Analysis of data focused on finding the extent to which design methods and design techniques had been used to identify and bring together the key stakeholders and empower citizens within the framework. Close consideration was given to student teams’ recognition of key stakeholders for a given project and their identification of shared and discrete value.

Analysis and Findings

The analysis identified four-core design-led activities, which were used to engage the key stakeholders namely, *observe and understand*, *interpret*, *represent* and *engage and communicate*. Additionally, a stakeholder framework was created for each case study, which was later consolidated into what we refer to as the 'creative consortia' (Figure 1).

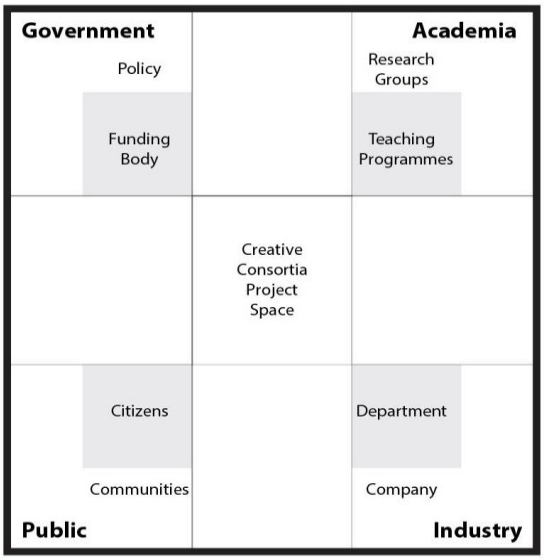

Figure 1: Creative consortia: Stakeholder framework

In the three cases, four key stakeholders were represented, although, the student teams recognised key stakeholders early on in the project, not all stakeholders identified were actively engaged throughout the project. The framework, illustrated the stakeholders who should be engaged in different phases of a project for social innovation, and therefore indicated gaps in the project strategy. The next sections discusses the value of the four identified activities in engaging stakeholders, and through the case studies describes the value created for each stakeholder.

Key Activities for Stakeholder Engagement

Once in multidisciplinary teams the students in their connector-integrator role went through four activities to identify, and manage, stakeholder expectations within the social innovation context. These four activities of stakeholder engagement, which do not occur as a linear

process but happen simultaneously where at certain moments one activity becomes dominant, were:

Observe and Understand: Using numerous design research techniques to generate a collection of primary and secondary data, numerous fragments to illustrate different people' perception of the problem space. The data was focused on understanding the 'beneficiaries' of the social change (primarily citizens but also considering the gains or losses of other connected stakeholders). As new systems, services, products, events and policies were proposed, this activity helped the students to consider the dynamic amongst stakeholder positions.

Interpret: This activity evidenced student teams using interpretation by applying multidisciplinary perspectives to turn stories and data fragments into opportunities, leading to future ideas. They often used storytelling to make arguments compelling, to test and strengthen ideas, and to prepare a communication strategy to support the project pitch.

Represent: This activity entailed students creating and exemplifying ideas visually and dynamically. Multidisciplinary thinking was evidenced in developing ideas specifically for project setting (its community members and organisations) by developing ideas into business propositions and strategy. Key philosophy underlying student activity is that all stakeholders' viewpoints are given equal weightage and no one stakeholder emerges as the main owner of the outcomes.

Engage & communicate: This activity encompasses a variety of students and stakeholder co-creative engagements. Typically these engagements were workshops designed to shape the shared value using design techniques to enable the contribution of all stakeholder types. Special care was given to represent all the project voices, while being mindful to those who were least influential.

Case Study 1: Low Simonside

Context

Low Simonside Community Association, who is responsible for the future of the local community's assets, faces a challenge as council funding is reduced and withdrawn. They reached out to the Multidisciplinary Innovation (MDI) group to explore new service opportunities they could provide to help and engage the community. Their questions to the MDI academics and students were: How can we use our resources to deliver new services and enterprise opportunities; what sort of services would attract current non-users; and, how can we better deliver existing services?

Stakeholders and Value Creation

Students identified three main stakeholders for the project – the Community Association, the Community Centre and the community (benefactors) themselves. In later stages of the project students also involved the second stakeholder, the government, but evidence indicates that these local government employees were not active participants in the project, instead they were used as providers of information, which helped the student teams in strengthening their ideas.

Figure 3 indicates that the project space was mostly used to get a better understanding of the community, and communicate the new knowledge to the Community Association. The Low Simonside project delivered clear impact in terms of organisational stimulation, where the Low Simonside Community Association identified the needs of the community, and established ways in which they could have a wider impact.

The three-week project did illustrate the value of this approach for raising enthusiasm and confidence, informing understanding and supporting planning for the transfer of responsibility of community assets from local authorities to community associations more broadly.

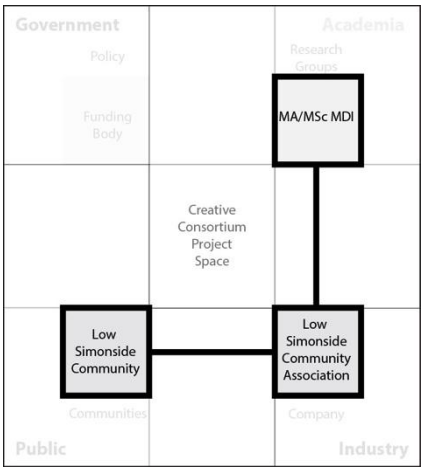

Figure 3: Low Simonside stakeholder engagement framework

Challenges

The student team identified a set of stakeholders that represented the make-up of creative consortia, however, this set of stakeholders were not brought actively into the project space. This project did not set out to influence policy or the council/community relationship more broadly across the region. Nor did it set out to generate any significant research value, and create opportunities for further funding; nevertheless, the project provided a good opportunity for student engagement and learning.

Case Study 2: Town of Colour

Context

Town of Colour was initiated by a multinational corporation looking into building a manufacturing unit in the Ashington area in the North East of England. Ashington, predominantly a poor community, has a history of disengaged 'citizens'. The corporate was looking to create awareness for their brand within the community, and approached MDI to identify opportunities for creating engagement, services or community enhancements that would allow direct engagement of the people of Ashington. Their questions to the MDI academics and students were: How could corporate social responsibility engage with the people/citizens of the community? How could a social engagement project raise more

awareness of the brand within the community?

Stakeholder and Value Creation

The student teams identified key stakeholders in the first phase of the project, the company, the community, and government, evidencing good practice of connecting different stakeholders. Figure 6 illustrates the engagement level of different stakeholders in different phases of the project.

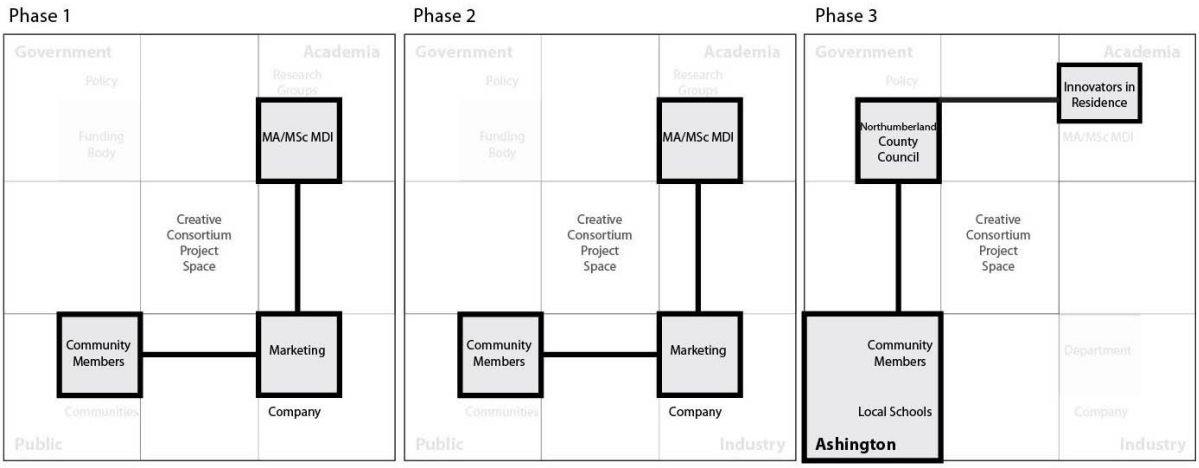

Figure 6: Town of Colour Stakeholder Framework

The project evidenced high level of engagement of three-stakeholders in the different phases:

Phase one and two - the community (society), the university and the company; and

Phase three - the community, the university, and the local government.

It shows that the community, the primary stakeholder, was involved in all the three phases. In fact, in phase three, the community engagement was most prominent, resulting in opportunities of more empowerment of the community.

Unlike Low Simon Simonside, Town of Colour demonstrated that design has an important role to play as a creative lead in a complex project, and also illustrated that design had the capability to bring different institutional stakeholders together. As a facilitator-connector, design, through the university, in the role of academic-student teams and academic-innovator

in residence researchers, established and creatively stimulated the stakeholder setting leading it toward socially innovate futures, and strengthening it as a creative consortium.

Challenges

While this project evidenced exemplarily stakeholder engagement (three stakeholders), the connection was discontinuous. The interaction with the local government was also very limited, and they were not well incorporated within the project process, leading to them being observers of the impact instead project participants. Additionally, none of the university's research groups were involved in any of the phases of the project; hence no research grants or new long-term research collaborations were established.

Whilst the project proved to be a great opportunity for student engagement and learning, it did not involve the university, beyond better informal relationships between the university and local business, developing knowledge or new methods 'value', which the stakeholders could use beyond this specific project.

Case Study 3: Percy Hedley Foundation

'Able 2', part of the Percy Hedley Foundation, offers day services and a training ground to adults with physical and communication disabilities. They provide training opportunities in cooking, wood and metal work, ceramic products, handicrafts, digital and print media etc., therapies such as physiotherapy and salt therapies, and other community services.

Context

Percy Hedley Foundation approached the MDI team and student cohort to help them explore business opportunities emerging from Able 2 as new social and commercial ventures and enterprises for their adults. Their questions to the MDI academics and students were: How can Able 2 transform itself into, or to support, social enterprise without compromising the value its services bring to its service users? What other services could Able 2 provide to its users and the community to support enterprise?

Stakeholders and Value Creation

Figure 8 illustrates the stakeholders who were engaged in the project space, the company (Able 2 & Percy Hedley Foundation), the service users (citizens), and the service buyers (local stores and broader public). The stakeholders predominantly involved only these two-stakeholders i.e. the society and the industry; nevertheless, the in-depth engagement with the service users, and service buyers by the students enabled them to propose ideas that were immediately applied within Percy Hedley.

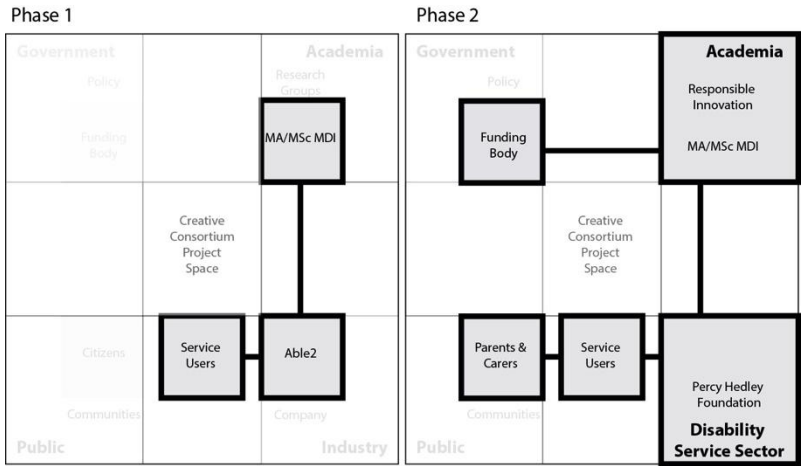

Figure 8: Percy Hedley Foundation Stakeholder Framework

Due to the success of the first phase, the project was extended, and now a direct collaboration with the Percy Hedley Foundation Board of Governors has been established. The Percy Hedley Foundation has approved funding and a research assistant has been appointed to take the research conducted by the student's forward, and few of the outcomes of the second phase are discussed here (Spencer, et al., 2016).

Unlike Low Simonside, and Town of Colour, the project with the Percy Hedley Foundation has established two strong stakeholders, the university through its research group, and the client through Percy Hedley Foundation's endorsement on the next phase. An emerging objective of this work is to develop positions and evidence to petition, and we hope co-develop this with government on employment policies in the future.

Challenges

Percy Hedley set up a longer-term collaboration that, in the end, involved multiple stakeholders from the Government; and, this was unachievable in the other two projects. However, with the increasing involvement of stakeholders from the Board of directors and Government, the project moved into the domain of academic research, hence reducing the function of the multidisciplinary student cohort in the project. Nevertheless, the role of the multidisciplinary engagement was fulfilled by the academic partners who were from both design and business backgrounds.

Conclusion

This investigation focuses on university led collaborations that aim at enabling social innovation. We documented and analysed three projects undertaken by multidisciplinary student teams, which focused on social innovation issues. Evidence confirmed four design-led activities, running through an eight-step process, undertaken to engage project stakeholders and empower citizens, achieved by creating non-hierarchical environments for facilitated co-creative discussions. The projects produced community and company stimulation underpinned by creative, and innovative examples, and strategies for community development and change. The evidence suggests that these projects create or strengthen social relationships through, the mutual recognition of the value each stakeholder group has to offer and gain through their positive involvement, and the shared desire to realise better futures by addressing questions deemed by all sides to be important.

The measure of these projects is the increase in appetite for change and the improved coordination of community members. However, the three cases studied fell short of the ambition of the creative consortium. The creative consortium requires a fundamental change in the way we view and approach collaborative project engagements.

University led social innovation projects within the creative consortium require:

- Representation and active participation of the social setting's stakeholders, from each element of the consortium, within the project space united by a common purpose.
- The means and mechanisms to transform a stimulating project into action for change. Evaluations of resource, network and funding need to be undertaken prior to a project commencing to establish readiness for social action and the scope of change within a network's means. This might result in funding applications being establish as the goal of early project activity.
- Projects to be undertaken at a scale that can demonstrate and evidence value that is applicable and scalable to regional and national policies.

Within creative consortia, multidisciplinary students, as a connector-integrator needs to:

- Creatively stimulate the stakeholder setting so that common goals and hopes are uncovered; ideas and plans are expressed and developed; obstacles are identified and means to overcome them considered.
- Empower citizens with decision-making, voting rights and autonomy; an environment that is non-hostile and non-hierarchical; and the tools to both, contribute and develop ideas, and to prototype and communicate them.
- Lead toward socially innovative futures by materialising and visualising progress, prototyping the collective vision and illustrating the roadmap.

Our findings indicate that universities, especially the design disciplines are able to advance learning through partnerships with creative consortia in order to improve, transform, and create new ways of working. In this consortium the university's learning and teaching, research groups, strategic level business and engagement agendas are all connected through the student project space to generate value (Anonymous, 2016). At this institutional level, the creative consortium can develop four-fold value with each new social setting: (1) meaningful

public and commercial engagement; (2) insights into and scalable solutions for social issues; (3) research about the role and value of design as a contributor for social innovation; and (4) valuable experiences with real projects and face-to-face interactions with clients, for our students.

Acknowledgments

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